

OSI Chart Notes

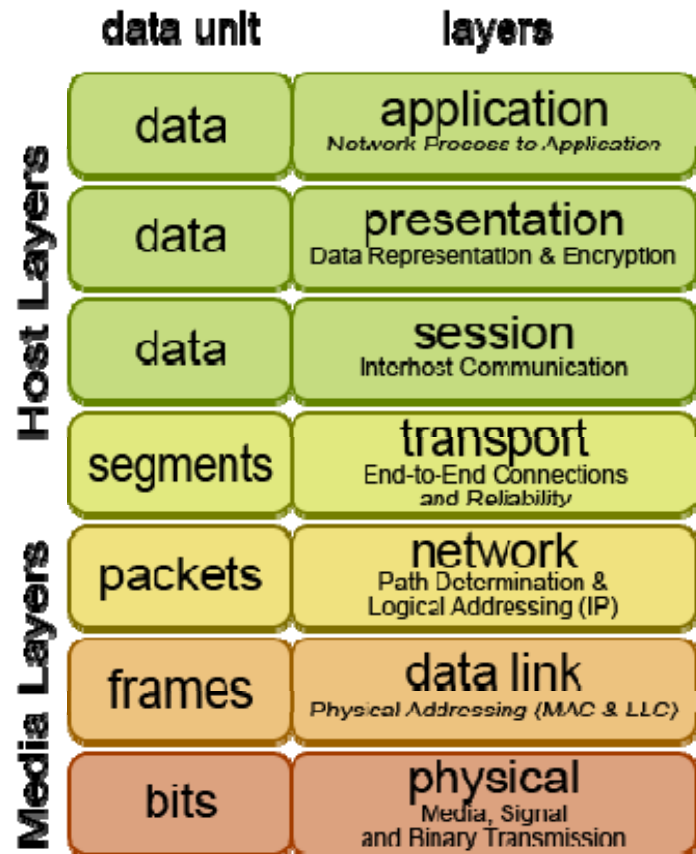
General Info

Layer	Name	Description
7	Application	Serves the application process, providing features such as file sharing, network transparency, and distributed processing.
6	Presentation	Performs services generally required by applications, such as data conversions, encryption, and compression.
5	Session	Negotiates and manages communications sessions between network processes.
4	Transport	Accepts data from the session layer and determines how to present it to the network layer. Takes data from the network layer and redistributes it to the appropriate applications or other entities on the upper layers.
3	Network	Routes data between adjacent or local network devices in the form of <i>packets</i> . A <i>packet</i> is the fundamental unit of data transmitted between network layers on two nodes.
2	Data Link	Provides an interface to a communications medium on the physical layer. Changes packets of data into <i>frames</i> and vice versa. A <i>frame</i> is the elementary unit of information transferred across the data link layer. Packets are contained within frames. The data link layer may provide error detection and correction.
1	Physical	Transmits raw bits over a physical medium, such as cable, microwave, or fiber optic. Converts frames to electronic signals, pulses, or other physical forms, and the reverse.

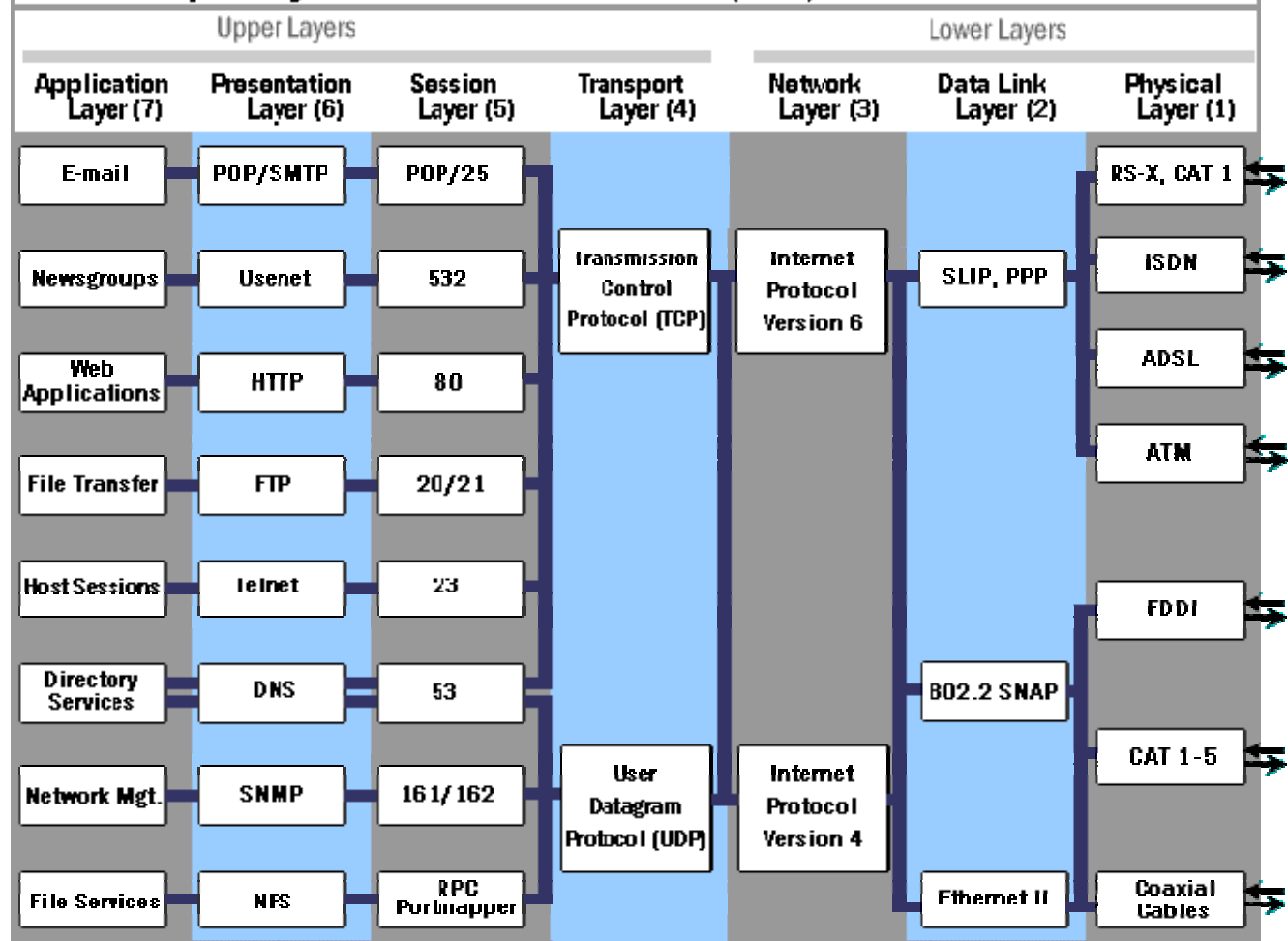
Chapter 2 – OSI model

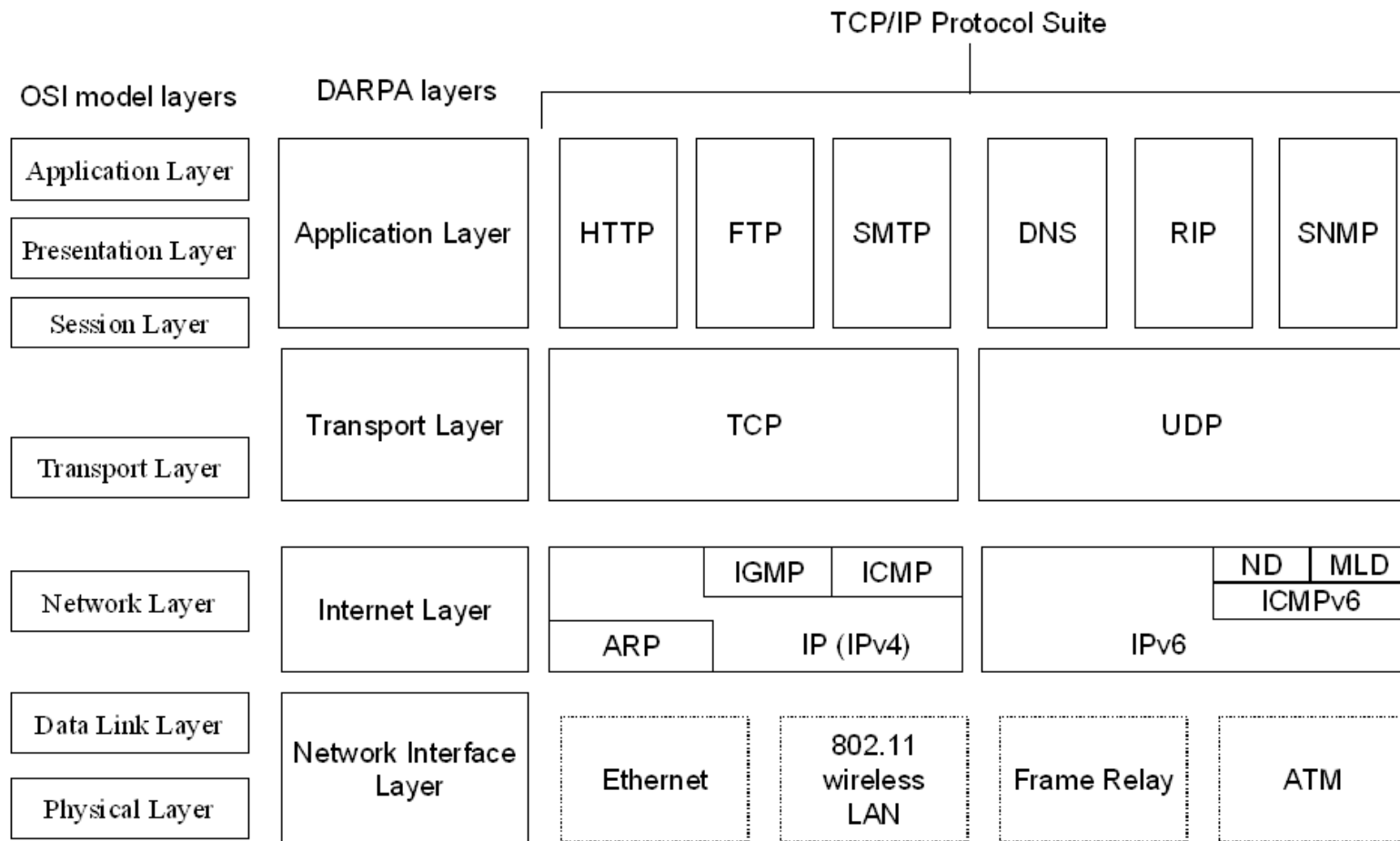
HINTS	LAYER	#	CHARACTERISTICS	Protocols	ENCAPSULATION PROCESS – PDU*	PDU HINTS	EQUIPMENT USED
<i>Away</i>	Application	7	<ul style="list-style-type: none"> • Closest to user • Provides network service to applications (browser, email, etc) 	Telnet, SMTP FTP, SNMP HTTP, FTP DNS	Data	<i>Darn It!</i>	<ul style="list-style-type: none"> • Computer • Gateway
<i>Pizza</i>	Presentation	6	<ul style="list-style-type: none"> • Data representation • Data readability and format • Data structures • Negotiates syntax • Ensures data arriving from network can be used by the application • Encryption and encoding occur here 	Same as Above	Data	<i>Darn It!</i>	<ul style="list-style-type: none"> • Computer • Gateway
<i>Sausage</i>	Session	5	<ul style="list-style-type: none"> • Inter-host communication • Establishes/manages/terminates sessions b/n. Applications • Manages dialog between parties i.e. making sure that the previous request has been fulfilled before the next one is sent • Provisions for data expedition, class of service, and exception reporting 	NFS SQL RPC X-Win	Data	<i>Darn It!</i>	<ul style="list-style-type: none"> • Computer • Gateway
<i>Throw</i>	Transport	4	<ul style="list-style-type: none"> • Transportation issues b/n hosts – TCP: connection oriented protocol that provides full-duplex (send/receive) data transmission • Data transport readability • Establish/maintain/terminate virtual circuits • Fault detection and recovery • Information flow control • End-to-end connections 	TCP UDP	Segments	<i>Some</i>	<ul style="list-style-type: none"> • Computer • Gateway
<i>Not</i>	Network	3	<ul style="list-style-type: none"> • Connectivity and path b/n 2 end systems • Routing • Network address and best path • IP, IPXX, and Appletalk located here 	IP IPX Appletalk	Packets	<i>People</i>	Network address <ul style="list-style-type: none"> • Router
<i>Do</i>	Data Link LLC MAC	2	<ul style="list-style-type: none"> • Access to media • Reliable transfer across media • Physical addressing – MAC addressing • Networking topology • Error notification • Flow control 	NDIS ODI Mac Address	Frames	<i>Fight</i>	MAC address: <ul style="list-style-type: none"> • Bridge • NIC • switch
<i>Programmers</i>	Physical	1	<ul style="list-style-type: none"> • Deals with data in bits (binary transmission); sending and receiving bits from the connecting medium • Wires, connectors, voltages, data rates 	N/A	Bits	<i>Back</i>	Bits <ul style="list-style-type: none"> • Wire (fiber, CAT-5, coaxial) • Repeaters • Hubs • transceiver

OSI Model



Open Systems Interconnection (OSI) Reference Model





Protocols and OSI to TCP/IP Layers

